AMENDMENTS TO THE CLAIMS

1.(thrice amended): An address management method in a communication system equipped with a plurality of terminals, and a server [having an address table] for [storing] registering a corresponding relationship between a first [protocol] address and [terminal] a second address of each terminal, [and an exchange which accommodates each terminal and the server, said] the method comprising the steps of:

[a first step in which an originating terminal sends a terminal address interrogation request to the server if the terminal address of another party's terminal is unknown at the time of communication;

a second step in which the server, upon receiving the terminal address interrogation request from the terminal, refers to the address table and searches for a terminal address corresponding to a protocol address contained in said interrogation request;

a third step in which, if a terminal address corresponding to said protocol address is obtained from the address table, the server notifies the terminal of this terminal address;

a fourth step in which, if the terminal address is not obtained from the address table, the server transfers a terminal address interrogation request containing said protocol address to all terminals via the exchange;]

sending, to the server by an originating terminal, an address interrogation request which includes a first value indicative of a request and a first address;

transferring, to a plurality of terminals by the server, the address interrogation request which includes the first value and first address;

[a fifth step in which, when] receiving, by each terminal [receives] the [terminal] address interrogation request transferred from the server[,the terminal determines];

determining by each terminal whether the first [protocol] address [contained] included in the address interrogation request received from the server agrees with a terminal's [its] own first [protocol] address; [and notifies the server of its own terminal address if agreement is achieved; and

a sixth step in which the server notifies the originating terminal of the terminal address of which it has been notified]

notifying, by each terminal, in response to the address interrogation request, the server of an answer which includes a terminal's own second address which is not registered in the server and a second value indicative of an answer when agreement is achieved;

receiving, from one of the plurality of terminals by the server, the answer which includes the second value and the second address which corresponds to the first address; and

registering, in the server, a corresponding relationship between the first address and the second address which is included in the answer.

2.(twice amended): The method according to claim 1, in the communication system which includes a switch or exchange which accommodates each terminal and the server, wherein [said fourth] the transferring step includes:

a step in which the exchange or switch connects the server with [all] a plurality of terminals by PVCs (permanent virtual channels) [having identical values]; and

a step in which, when an [a terminal] address interrogation request having [said identical] a predetermined value for a PVC has entered from the server, the exchange or switch

performs cell copying, whereby [said] the address interrogation request cell is transferred to the plurality of [all] terminals.

3.(twice amended): The method according to claim 1, in the communication system which includes a switch or exchange which accommodates each terminal and the server, wherein [said fourth] the transferring step includes:

a step in which the exchange or switch connects the server with [all] a plurality of terminals by PVCs (permanent virtual channels) [having identical values] and divides [all] the plurality of terminals into a plurality of groups;

a step in which, when an [a terminal] address interrogation request having [said identical] a predetermined value for a PVC has entered from the server, the exchange or switch performs cell copying, whereby [said] the address interrogation request cell is transferred to all terminals in a first group;

a step in which the server performs monitoring to determine whether a prescribed terminal has answered with a second [terminal] address within a set period of time;

a step in which the server sends the address interrogation request cell to [all] the plurality of terminals of the next group if no terminal answers with a second [terminal] address within the set period of time; and

a step in which the server transfers the address interrogation request cell while successively changing the group until a prescribed terminal answers with a second [terminal] address.

6.(twice amended): [The method according to claim 1, further comprising:] An address management method in a communication system equipped with a plurality of terminals, and a server for registering a corresponding relationship between a first address and a second address of each terminal, the method comprising the steps of:

sending, to the server by an originating terminal, an address interrogation request which includes a first value indicative of a request and a first address;

transferring, to a plurality of terminals by the server, the address interrogation request which includes the first value and first address;

receiving, by each terminal, the address interrogation request transferred from the server;

determining by each terminal whether the first address included in the address interrogation request received from the server agrees with a terminal's own first address;

notifying, by the terminal, in response to the address interrogation request, the server of an answer which includes a terminal's own second address which is not registered in the server and a second value indicative of an answer when agreement is achieved;

[a seventh step in which, when the server receives the answer of the terminal address from the terminal, the server deletes a corresponding relationship, referred to least recently, between a protocol address and terminal address if the address memory is full] receiving, from one of the plurality of terminals by the server, the answer which includes the second value and the second address which corresponds to the first address;

deleting a corresponding relationship, referred to least recently, between a first address and a second address if the server cannot accommodate a corresponding relationship

between the first address and second address included in the answer received from a prescribed terminal; and

[an eigth step] registering, in [which] a memory by the server, [newly stores the] a corresponding relationship between [said protocol] the first address and the [terminal] second address[, of] which [it has been notified,] is included in the [address table] answer.

8.(thrice amended) A communication system equipped with a plurality of terminals, and a server [having an address table] for registering [storing] a corresponding relationship between a first [protocol] address and second [terminal] address of each terminal, [and an exchange which accommodates each terminal and the server,] wherein

each of [said] the terminals comprises:

means for sending, to the server, [a terminal] an address interrogation request [to the server if the terminal address of another party's terminal is unknown at the time of communication] which includes a first value indicative of a request and a first address; and

[communication means for communicating with the other party's terminal via the exchange using a terminal address of which it has been notified by the server in response to the interrogation request; and]

[terminal address answering] means for answering the server with an answer including its own second [terminal] address which is not registered in the server and a second value indicative of an answer when [if] a first [protocol] address, included [contained] in [a terminal] an address interrogation request [transferred] which has been received from the server agrees with its own first [protocol] address; and

the [said] server comprises:

[means for referring to the address table and searching for a terminal address corresponding to a protocol address contained in a terminal address interrogation request from a terminal;]

means [which, if a terminal address corresponding to said protocol address has not been registered in the address table, is] for transferring the [terminal] address interrogation request [containing said protocol] which includes the first value and the first address to [all] a plurality of terminals [via the exchange]; and

[means for notifying the terminal which has issued the interrogation request of a terminal address found from the address table or of a terminal address obtained by an answer from a terminal]

registration means for registering, in the server, a corresponding relationship between the first address and the second address which is included in the answer which has been received from one of the plurality of terminals in response to the address interrogation request which has been transferred from the server.

11.(twice amended) The communication system according to claim [10] 8, wherein when the server cannot register a corresponding relationship between the first address, and second address included in the answer which is received [receives the answer of the terminal address] from the prescribed terminal, [said] the registration means deletes a corresponding relationship, referred to least recently, between a first [protocol] address and second [terminal] address [if the address memory is full].

12.(thrice amended) A server in a communication system equipped with a plurality of terminals, [the server for managing a corresponding relationship between a protocol address and terminal address of each terminal, and an exchange which accommodates each terminal and the server, said] the server comprising:

[an address table for storing the corresponding relationship between a protocol address and terminal address of each of the plurality of terminals;

search means for referring to said address table and searching for a terminal address corresponding to a protocol address contained in a terminal address interrogation request from a terminal; and]

interrogation means [which, if a terminal address corresponding to the protocol address has not been registered in the address table, is] for [interrogating all] receiving, from an originating terminal, an address interrogation request including a first value indicative of a request and a first address, and for transferring the address interrogation request to a plurality of terminals;[, via an exchange, for the terminal address corresponding to this protocol address; wherein in response to receipt of a terminal address interrogation request from an originating terminal, said search means refers to said address table to obtain the terminal address conforming to the protocol address contained in this terminal address interrogation request and, if this terminal address has not been registered, said interrogation means interrogates the terminals for terminal address]

means for receiving, from one of the plurality of terminals having it's own second address which is not registered in the server, an answer including a second value indicative of an answer and a second address which corresponds to the first address, in response to the address interrogation request which has been transferred from the server; and

registration means for registering, in a memory, a corresponding relationship between the first address and the second address which is included in the answer.

14.(twice amended) The server according to claim [13] 12, wherein when the server receives [the] an answer including a second value indicative of an answer and [of the terminal] a second address from the [prescribed terminal] one of the plurality of terminals, [said] the registration means deletes a corresponding relationship, referred to least recently, if [said address memory is full] the server can not accommodate a corresponding relationship between the first address and second address, and registers, in a memory of the server, the corresponding relationship between the first [protocol] address and the second [terminal] address[, of which it has been notified, in said address table] which is included in the answer.

15.(twice amended) The server according to claim 12, wherein the [said terminal address] interrogation means divides [all] a plurality of terminals into a plurality of groups, interrogates all terminals of a first group for a second [terminal] address and, if notification of an answer [of a terminal] including the second address is not received within a set period of time, interrogates all terminals of the next group for a [terminal] second address.

40.(thrice amended): In a network system having a server, the method of registering in the server a corresponding relationship between a first identifier and a second identifier for a communicating party, comprising the steps of:

receiving an interrogation request including a first value indicative of a request and a first identifier;

determining a corresponding second identifier is not registered in the server;

transferring the interrogation request to a plurality of terminals which can accommodate the communicating party;

receiving, from a terminal having it's own second identifier which is not registered in the server, an answer including a second value indicative of an answer and a second identifier which corresponds to the communicating party identified by the first identifier, in response to the interrogation request; and

registering a corresponding relationship between the first identifier and the second identifier which is included in the answer.

41.(twice amended): The method according to claim 40, wherein the corresponding relationship between the first identifier and the second identifier is registered in a vacancy which has been formed by deleting an entry which has a corresponding relationship between a first identifier and a second identifier.

42.(amended): The method according to claim 41, wherein the vacancy is formed by deleting an entry which has the oldest reference time.

43.(once amended) The method according to claim 40, wherein the system includes a switch or exchange and wherein the transferring step includes:

a step in which the switch or exchange connects the server with a plurality of terminals by PVCs (permanent virtual channels);

a step in which, when the interrogation request, in the form of a cell having a

predetermined virtual channel identifier, is entered from the server, the switch or exchange appends tag information indicating a terminal group to the cell, performs cell copying based on the tag information indicating the terminal group, and transfers the cell to terminals of the terminal group.

44.(once amended): The method according to claim 40, wherein the system includes a switch or exchange and wherein the transferring step includes:

a step in which the switch or exchange connects the server with a plurality of terminals by PVCs (permanent virtual channels) and divides the plurality of terminals into a plurality of groups;

a step in which, when the interrogation request in the form of a cell is entered from the server, the switch or exchange performs cell copying, whereby the interrogation request cell is transferred in a first group;

a step in which the server performs monitoring to determine whether a prescribed terminal has answered with its own identifier within a set period of time;

a step in which the server sends the interrogation request cell to all terminals of the next group when no terminal answers with its own identifier within the set period of time; and

a step in which the server transfers the interrogation request while successively changing the group until a prescribed terminal answers with its own identifier.

45.(twice amended): The method according to the claim 40, further comprising a step in which, when the server receives the answer including the second identifier and the second value

from the one of the plurality of terminals, the server registers the corresponding relationship between the first identifier and the second identifier in place of a memory in the server designated by an index value which is calculated based on a value of the first identifier or the second identifier.

46.(twice amended) The method according to claim 40, further comprising a step in which the server periodically receives an interrogation request including a second identifier and a second value indicative of an answer from each terminal of the plurality of terminals, whereby the corresponding relationship between the first identifier of its own terminal and the second identifier is kept in a server.

47.(amended) In a network system having a server, the method comprising the steps of:

receiving, from an originating terminal by the server, an address interrogation request including a first address and a first value indicative of a request;

transferring, by the server, the address interrogation request to a plurality of terminals;

receiving, from an originating terminal by the server, an answer including a second value indicative of an answer and second address which corresponds to a first address;

deleting, from the server, an entry which has a corresponding relationship between a first address and a second address from the server to form a vacancy when the server cannot register a corresponding relationship between the first address and the second address which is included in the answer; and

registering in a vacancy of the server a corresponding relationship between the first address and the second address which is included in the answer.

48.(amended) The method according to claim 47, wherein the vacancy is formed by deleting the entry which has the oldest reference time.

49.(amended) An address resolution system equipped with a plurality of terminals, a switch or exchange which accommodates each terminal of a plurality of terminals and a server, wherein

each terminal of the plurality of terminals comprises:

means for sending a terminal address interrogation request which includes a first value indicative of a request and a first address to the server if a second address of another party's terminal is unknown at the time of communication; and

means for answering the server with an answer including a terminal own second address and a second value indicative of an answer when a first address included in a terminal address interrogation request received from the server agrees with a terminal own first address; and

the server comprises:

means for transferring the terminal address interrogation request including the first value indicative of the request and the first address to the plurality of terminals; and

receiving means for receiving, in response to the terminal address interrogation request which has been transferred by the server, an answer including a second address corresponding to the first address from one of the plurality of terminals;

means for registering in the server a corresponding relationship between the first address and the second address which has been included in the answer.

50.(amended) The address resolution system according to claim 49, wherein the switch or exchange comprises:

means for connecting the server with a plurality of terminals by PVCs (permanent virtual channels); and

means which, when a terminal address interrogation request cell having a predetermined value for a PVC is entered from the server, is for performing cell copying and transferring of the interrogation request cell to the plurality of terminals.

51.(amended) The address resolution system according to claim 49, wherein the server has registration means which when the server receives the answer including the second address corresponding to the first address from one of the plurality of terminals, is for registering a corresponding relationship between the first address and the second address in a place designated by an index value which is calculated based on a value of the first address or the second address.

52.(amended) The address resolution system according to claim 49, wherein when the server receives the answer including the second address corresponding to the first address from

the one of the plurality of terminals, the registration means deletes an entry which has a corresponding relationship between a first address and a second address from the server when the server cannot accommodate an entry having a corresponding relationship between the first address and the second address which are included in the answer which has been received from the one of the plurality of terminals.

53.(amended) A server comprising:

means for receiving, from an originating terminal, an address interrogation request including a first address and a first value indicative of a request;

means for transferring the address interrogation request to a plurality of terminals;

means for receiving an answer including a second value indicative of an answer and a second address which corresponds to the first address from one of the plurality of terminals in response to the address interrogation request which has been transferred; and

means for registering, in a memory of the server, a corresponding relationship between the first address and the second address in a place designated by an index value which is calculated based on a value of the first address or the second address,

wherein when the server receives the answer including the second address corresponding to the first address from the one of the plurality of terminals, the registration means deletes a corresponding relationship, referred to least recently, when the server can not accommodate a corresponding relationship between the first address and the second address, and registers the corresponding relationship between the first address and the second address which is included in the answer.

55.(amended): The server according to claim 53, wherein the terminal address interrogation means divides terminals into a plurality of groups, interrogates terminals of a first group for a second address and, when a notification of an answer including a second address is not received within a set period of time, interrogates the terminals of the next group for a second address.

58.(once amended): In a network system including communicating parties accommodated by terminals, a method of registering a corresponding relationship between a first identifier and a second identifier for a communicating party, comprising the steps of:

when a communication request is issued, determining, in a terminal accommodating an originating party, whether a second identifier for another communicating party is registered;

sending to a server an interrogation request including a first value indicative of a request and a first identifier of the other communicating party when the second identifier is not registered in the terminal;

transferring, by the server, the interrogation request to a plurality of terminals which can accommodate the other communicating party when the second identifier corresponding to the first identifier is not registered in the server;

receiving, at the server, an answer including a second value indicative of an answer and the second identifier which corresponds to the other communicating party identified by the first identifier in response to the interrogation request, said answer from a terminal having it's own second identifier which is not registered in the server;

sending the answer to the terminal accommodating the originating party; and

registering, in the terminal accommodating the originating party, a corresponding relationship between the first identifier and the second identifier which is included in the answer.

59. The method of claim 58 wherein the receiving step further includes:

registering, in the server, the corresponding relationship between the first identifier and the second identifier which is included in the answer.

60. The method of claim 58 wherein when the second identifier corresponding to the first identifier is registered in the server, the server responds to the interrogation request by sending the answer to the terminal accommodating the originating party.

61. The method of claim 58 wherein the plurality of terminals are a plurality of ATM terminals.

62. The method of claim 58 wherein the first identifier is a protocol address.

63. The method of claim 58 wherein the second identifier is a terminal address.

64. The method of claim 40 wherein the plurality of terminals are a plurality of ATM terminals.

65. The method of claim 40 wherein the first identifier is a protocol address.

66. The method of claim 40 wherein the second identifier is a terminal address.

67.(once amended): A network identifier resolution system equipped with a plurality of terminals, a switch or exchange which accommodates each terminal of a plurality of terminals and a server, wherein

each terminal of the plurality of terminals comprising:

a processor that receives a communication request message, determines a first identifier from the communication request message, checks a local storage area for a corresponding second identifier, and when a second identifier is not registered, creates an interrogation request message which includes a first value indicative of a request and the first identifier; and

a network interface unit that sends to the server the interrogation request message and receives answers and interrogation request messages from the server;

the server comprising:

a processor that receives the interrogation request message, checks a storage area for a corresponding second identifier, and when a second identifier is not registered, forwards the interrogation request;

network interface unit for transferring the interrogation request message including the first value indicative of the request and the first identifier to a plurality of terminals, and receiving, in response to the interrogation request message, an answer including a second

identifier corresponding to the first identifier from one of the plurality of terminals having it's own second identifier which is not registered in the server; and

the storage area for registering a corresponding relationship between the first identifier and the second identifier which has been included in the answer.

68. The method of claim 67 wherein a terminal of the plurality of terminals is a plurality of ATM terminals.

69. The method of claim 67 wherein the first identifier is a protocol address.

70. The method of claim 67 wherein the second identifier is a terminal address.